



State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3406 FAX (603) 271-7894



Mr. Rodney Bartlett
Town of Salem
33 Geremonty Drive
Salem, NH 03079

October 9, 2002
Letter of Deficiency
DAM #209.08

RE: Millville Reservoir Dam, Salem

Dear Mr. Bartlett:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that play a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on August 5, 2002. During this visual inspection and/or file review, the following deficiencies were observed:

- 1 There is spalled concrete on the left upstream concrete wall as shown on the August 11, 1999 plans submitted with the Contract Documents for the rehabilitation of the dam. One of the spalled areas located approximately 70 feet from the left end of the wall is approximately 6 inches wide and 4 inches deep, lowering the crest of the dam in this area;
- 2 There was a steel frame structure with rebar lying on the ground located upstream of the concrete wall approximately 50 feet to the left of the spillway. It was confirmed by the town that this gate structure will replace the timber stoplogs that were removed. The plans and specifications to repair the dam submitted in August of 1999 do not indicate that there would be a gate installed in place of the stoplogs, subsequently there are no details for the new structure. The existing gate is a 5 foot gate while the new frame has a 3 foot square opening for the new gate. DES sent a letter to the town indicating that this bulkhead could not be installed as currently configured without a dam reconstruction permit;
- 3 The right embankment crest and downstream slope are completely overgrown with trees. This has been an ongoing problem for several years;
- 4 There is deteriorated concrete on the right downstream training wall at the toe of the spillway;
- 5 The resurfacing repairs to the upstream face of the dam, proposed on the August 1999 plans, has been completed. However, the original scope of work on the plans was reduced (i.e. all proposed repairs downstream of the crest were not completed);
- 6 There is seepage on the downstream face of the left most spillway located along the horizontal construction joints approximately 6 feet below the spillway crest;
- 7 The low level steel pipe is deteriorated;

Millville Reservoir Dam
Dam #209.08
October 9, 2002
pg. 2

8. There are trees located in the spillway discharge channel within 35 feet of the spillway toe (i.e. downstream end of the concrete training walls);
9. The left downstream concrete spillway training wall is severely deteriorated;
10. There is fill missing on the left embankment downstream of the crest adjacent to the left spillway training wall. The earth crest is approximately 5 feet below the concrete crest of the dam;
11. There was a large stump floating against the upstream face of the dam located approximately 40 feet to the left of the spillway; and
12. The emergency action plan has not been tested and updated since 1997.

DES believes that the following deficiencies need to be addressed for the dam to be considered in good operating condition. As we discussed at our meeting, DES will allow the town to submit a schedule to complete the items listed below:

May 1, 2003:

1. Repair the spalled concrete on the upstream face of the dam to the left of the spillway;
2. Remove all trees and brush from the right embankment of the dam to a distance of 30 feet beyond the downstream end of the spillway retaining wall;
3. Repair the deteriorated concrete on the right downstream training wall at the toe of the spillway;
4. Submit a change in scope from the August 1999 proposed repairs. The scope should include a set of plans indicating what repairs were conducted (i.e. as-built plans);
5. Investigate, report on, and repair the seepage exiting the downstream face of the spillway;
6. Evaluate the condition of the deteriorated steel low level pipe and replace any portion deemed structurally unsound;
7. Remove the trees and brush located within the spillway discharge channel to a minimum distance of 35 feet from the toe of the spillway (i.e. downstream end of the concrete training walls);

Millville Reservoir Dam
Dam #209.08
October 9, 2002
pg. 3

8. Remove and replace the left downstream concrete spillway training wall. This work will require a dam reconstruction permit. Enclosed is an application to construct/reconstruct a dam;
9. Add fill to the left embankment adjacent to the left downstream spillway retaining wall to raise the earth embankment crest to the same elevation as the concrete crest;
10. Remove the floating stump from the upstream face of the dam; and
11. Test and update the EAP.

As part of the requested repairs, DES will be requesting that you submit an application to construct/reconstruct a dam with the associated filing fee of \$250. Once DES receives the application a review of the hazard classification will be conducted. If the dam remains a class B structure, a \$750 classification fee will be required. Enclosed is an informational sheet relative to dam classifications and their associated fees. The purpose of this submittal is for the aforementioned concrete repairs. Enclosed is an application for your use.

Due to the time that has lapsed as well as additional deficiencies observed as a result of the August 5, 2002 inspection, DES will be officially closing out the 1999 LOD as well as the September 20, 2000 reissued LOD. Please note that we are closing out the portion of the 2000 reissued LOD that applies to this dam in particular. Enclosed are copies for your reference. It is our hope that the additional deficiencies as well as the outstanding deficiencies will be addressed according to a mutually agreed upon schedule between the town and DES.

DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

Millville Reservoir Dam
Dam #209.08
October 9, 2002
pg. 4

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the top of the previous page.

Sincerely,



Jeffrey M. Blaney
Dam Safety Engineer

Attachments Copy of September 20, 2000 LOD, March 23, 1999 LOD, Application to Construct/Reconstruct a Dam, DB8, DB13

cc: Gretchen Rule

Certified # 7000 1670 0000 0586 0868

JMB/was/h:/safety/wendy/lod/209-08blod.doc



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Department of Environmental Services
State Dam Safety Program
Water Division, Dam Bureau
6 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Intent to Complete Repairs
DAM #209.08
DAM Millville Reservoir Dam

RE: Letter of Deficiency Issued on October 9, 2002

Dear Dam Safety Program

In response to the above referenced Letter of Deficiency (LOD), I concur with the Department of Environmental Service's recommendations, and specifically agree to complete the following items by the indicated schedule.

DATE: May 1, 2003

Repair the spalled concrete on the upstream face of the dam to the left of the spillway;

Remove all trees and brush from the right embankment of the dam to a distance of 30 feet beyond the downstream end of the spillway retaining wall;

- 3 Repair the deteriorated concrete on the right downstream training wall at the toe of the spillway
- 4 Submit a change in scope from the August 1999 proposed repairs. The scope should include a set of plans indicating what repairs were conducted (i.e. as-built plans);

Investigate, report on, and repair the seepage exiting the downstream face of the spillway

- 6 Evaluate the condition of the deteriorated steel low level pipe and replace any portion deemed structurally unsound;
- 7 Remove the trees and brush located within the spillway discharge channel to a minimum distance of 35 feet from the toe of the spillway (i.e. downstream end of the concrete training walls);
- 8 Remove and replace the left downstream concrete spillway training wall
9. Add fill to the left embankment adjacent to the left downstream spillway retaining wall to raise the earth embankment crest to the same elevation as the concrete crest;
10. Remove the floating stump from the upstream face of the dam; and
11. Test and update the EAP

Intent to Complete Repairs
Dam #209.08
October 9, 2002
pg. 2

In lieu of the above, you may propose adjustments to the content or schedule associated with the requested repairs/work. (please state reasons for proposal and use reverse side if more space is needed).

Signature of Owner: _____

_____ (print name)

Date: _____

ENG-: JMB